

The 2018 Josep Comas i Sola International Summer School in Astrobiology

In June 2018 astrobiology students from around the world gathered in Santander, Spain to learn astrobiology from leading experts. This year's theme, *Biomarkers: Signs of Life Through Space and Time*, encouraged students to think about how they would identify signs of life on the ancient Earth, Mars, icy satellites of the outer solar system and exoplanets from an interdisciplinary perspective. With lectures and hands-on activities, students learned how to identify life in the universe.

PARTICIPANTS

36 students total
16 from US institutions, 20 from EU Institutions
19 female students, 17 male students

LECTURERS

Laurie Barge, Jet Propulsion Laboratory, Icy Satellites
V́ctor Parro, Centro de Astrobiología, Mars
Jörn Peckmann, Hamburg, Early Earth
Aki Roberge, Goddard Space Flight Center, Exoplanets

PROGRAM

Eight Lectures:

- Signs of Life on Early Earth
- The Preservation of Biomarkers Across Geological Time
- Technologies for the Detection of Molecular Biomarkers
- Searching for Signs of Life on Mars
- Ocean Worlds: Geochemistry, Redox Cycling and Habitability
- Ocean Worlds: Defining Biosignatures and Developing Strategies for Life Detection
- Observing Planets at Interstellar Distances
- Does an Exoplanet Have a Biosphere?

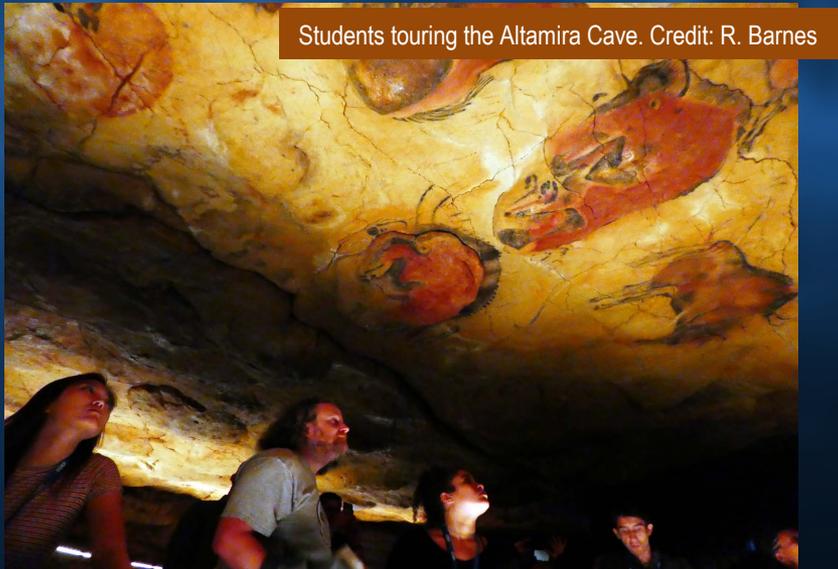
Four Student Group Projects, presented on the final day:

- Biomarkers in Ancient Earth Rocks
- Biomarkers in Simulated Martian Data
- Biomarkers in Simulated Icy Satellite Data
- Simulated Spectra of a Terrestrial Exoplanet

Excursion to Altamira and El Soplao Caves

Public lecture by V́ctor Parro: "Busqueda de vida en marte... y más allá" ("The Search for Life on Mars... and Beyond")

Students and lecturers stayed at the summer campus of the de la Magdalena Universidad Internacional Menéndez Pelayo (UIMP) to create an international community of astrobiologists!



Students touring the Altamira Cave. Credit: R. Barnes